

CLAIMS

1.

An apparatus for controlling flow rate of gases used in semiconductor device fabrication by differential pressure, comprising:

- a body having a flow passage for the gas used in the semiconductor device fabrication;
- a control valve for controlling a flow of the gas by opening or closing the flow passage of the body;
- a differential pressure generation element installed in the flow passage of the body to generate differential pressure;
- a tube installed to penetrate through the differential pressure generation element;
- a pressure sensor received in the tube to detect the differential pressure in the flow passage generated by the differential pressure generation element; and
- a central processing unit for calculating the flow rate of the gas according to a detection signal input from the pressure sensor and controlling the control valve.

2.

The apparatus as claimed in claim 1, wherein the differential pressure generation element comprises a porous material.

3.

The apparatus as claimed in claim 2, wherein the tube is installed to penetrate through the center of the porous material.

4.

The apparatus as claimed in claim 1, wherein the differential pressure generation element comprises a porous material having a first vertical plate portion vertically abutting on a lower wall surface of the flow passage, a horizontal plate portion horizontally extending from a downstream end of the first vertical plate portion, and a second vertical plate portion

on vertically extending from a downstream end of the horizontal plate portion and abutting on an upper wall surface of the flow passage.

5.

5           The apparatus as claimed in claim 4, wherein the tube is installed at the horizontal plate portion of the porous material to penetrate therethrough perpendicularly to a flow direction of the gas, and the pressure sensor is horizontally received in the tube.

6.

10           The apparatus as claimed in claim 1, wherein the differential pressure generation element comprises a plurality of capillary tubes installed along a flow direction of the gas.